

Application No. 10/666,416  
July 16, 2004  
Reply to Office Action of March 16, 2004

### REMARKS

Claims 20 and 21 are currently pending. In the Office Action, the Examiner raised objections to the specification, the drawings, and the abstract, as well as the Information Disclosure Statement (IDS) submitted by Applicants. On the merits, the Examiner rejected Claims 20 and 21 as allegedly being obvious over U.S. Patent No. 6,379,497 to Sandstrom et al. ("Sandstrom") in view of U.S. Patent No. 6,391,943 to Sarma et al. ("Sarma").

Each of the foregoing objections and rejections is respectfully traversed and favorable reconsideration is requested in view of the above amendments and following remarks.

#### I. Applicant's IDS is Resubmitted.

On September 19, 2003, Applicants submitted with their application copies of earlier Information Disclosure Statements (IDS) previously submitted in the prosecution of the parent case. Copies of the references were not submitted because they were previously of record in the parent case. In the Office Action, the Examiner stated that he had not considered certain references because copies of the foreign and non-patent references had not been submitted with the IDS forms. Applicants wish to state that copies of these references were indeed previously submitted in the parent case; however, it appears that these copies of the references may have been misplaced in the Patent Office records. It was certainly not Applicants' intent to avoid consideration of these references by the Examiner, and Applicants would have submitted copies of the references in this case had Applicants known the references were not available to the Examiner from the parent case. Indeed, claims of very similar scope were allowed over these and the cited references in the parent case, and the present claims are undoubtedly also clearly allowable over all prior art of record.

To remedy this situation, Applicants are again submitting copies of the IDS forms from the parent case along with copies of all foreign and non-patent references. Consideration of the references is respectfully requested.

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II. The Objections to the Drawings, Specification, and Abstract are Overcome.

The Examiner also raised objections to the drawings because they do not include reference numbers for the "end 32 of the bottom portion" and the "top end area 33". It is noted that neither the "bottom portion end" nor the "top end area" are positively recited in the claims and are therefore unnecessary in the drawings. However, since the Examiner has indicated his preference to add the reference numbers to the drawings, a Replacement Sheet showing proposed amendments to add numbers 32 and 33 to Figs. 4 and 5 is enclosed herewith. Upon entry of this amendment, Applicants will submit a new formal drawing Replacement Sheet. It is submitted that these amendments overcome the objections to the drawings and that the same should be withdrawn.

The Examiner next objected to the Abstract as being over 150 words. Applicants have amended the Abstract to more particularly focus upon the invention as claimed in this divisional application and have reduced the total word count in the Abstract to less than 150 words. It is therefore submitted that this amendment overcomes the objection to the Abstract and that the same should be withdrawn.

Finally, the Examiner objected to the statement of related cases in the specification as having redundant references to the parent '340 application and as improperly referring to the case as a continuation-in-part of a provisional application. The specification has been amended as requested by the Examiner to overcome these objections.

Applicants wish to commend the Examiner for his careful and thorough review of the specification and drawings, and for bringing the aforementioned discrepancies to their attention.

III. The Claimed Invention Patentably Distinguishes Over the Cited References.

The Examiner rejected Claims 20 and 21, contending that they are obvious over the combination of Sandstrom and Sarma. It is respectfully submitted that these rejections are not well-taken.

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Applicants' claimed invention relates to paperboard containers such as cups made from a specific paperboard material. This paperboard material includes wood fibers and from about 5 to about 10 weight percent polymer microspheres. A barrier coating having a thickness of from about 0.5 to about 3.5 mil is disposed adjacent at least one surface of the material. The paperboard possesses all of the following physical properties: (1) an apparent density of from about 6.0 to about 10 lb/3MSF/mil, (2) a caliper of from about 24 to about 35 mil, (3) an average internal bond of at least about  $80 \times 10^{-3}$  ft-lbf, and (4) a Sheffield smoothness of about 300 SU or greater.

The Examiner contends that the Sandstrom references discloses paperboard containers such as cups possessing all of the claimed limitations except the Sheffield smoothness of about 300 SU or greater. The Examiner further contends that the smoothness property is disclosed in Sarma, and that it would therefore have been obvious at the time of Applicants' invention to combine the two reference in order to produce the claimed invention.

The Examiner's argument is flawed in at least two respects. First, Sandstrom does not disclose a single paperboard possessing all of the claimed properties of density, caliper, and internal bond. But even if Sandstrom did disclose such a paperboard, there is no motivation in the art that would have made it obvious to combine the teachings of Sandstrom with those of Sarma in the manner proposed by the Examiner.

As an initial matter, the Examiner cannot point to a single paperboard material in Sandstrom which has all of the following: (1) a barrier coating having a thickness of from about 0.5 to about 3.5 mil on at least one surface, (2) from about 5 to about 10 weight percent polymer microspheres, (3) an apparent density of from about 6.0 to about 10 lb/3MSF/mil, (4) a caliper of from about 24 to about 35 mil, and (4) an average internal bond of at least about  $80 \times 10^{-3}$  ft-lbf. Rather, the Examiner merely points to various disparate ranges and selected examples dispersed throughout the nearly seventy pages of disclosure in Sandstrom in an effort to "find" the individual paperboard properties somewhere in the patent. However, there is no one single paperboard disclosed or suggested having all these properties simultaneously.

Also, there is no mention whatsoever in Sandstrom of Applicants' claimed internal

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bond characteristics. Applicants believe their claimed internal bond in a paperboard in the claimed ranges of density and caliper is very important for the formability of the paperboard on cup-making and other machines for shaping paperboards into various articles such as bowls, cups, and the like. The lack of any mention of the internal bond of the board in Sandstrom is very telling. Not only does Sandstrom fail to mention the claimed internal bond property in a paperboard, but he also fails to disclose a single paperboard product that has the other claimed properties of density, caliper, and smoothness which exhibits this claimed internal bond for improved formability in modern, high speed forming machinery.

It is improper to reject a claim to a single product having certain specified characteristics where the rejection is predicated on the identification of the specified characteristics in different products. It makes no difference whether these different products are separately disclosed in a single reference, or in multiple references. The flaw is the same. Examiners are admonished not to use a “tinker toy” approach in which they selectively compile various properties from different products into a single, hypothetical product, having all the claimed properties. See, e.g., In re Kotzab, 217 F.3d 1365, 55 USPQ2d 1313 (Fed. Cir. 2000) (“a rejection cannot be predicated on the mere identification in [a single reference] of individual components of claimed limitations. Rather, particular findings must be made as to the reason the skilled artisan, with no knowledge of the claimed invention, would have selected these components for combination in the manner claimed.”)

Moreover, even if, hypothetically speaking, the Sandstrom reference did disclose a paperboard product having all of the claimed limitations except the smoothness limitation, there still is no motivation for one of skill in the art to “obviously” combine the smoothness properties disclosed in Sarma with the properties said to be disclosed in Sandstrom. Once again, the courts have been crystal clear on this issue: There must be objective evidence, within the relevant prior art, of a motivation to combine the references in such a manner as to arrive at the claimed invention. This motivation cannot come from mere “subjective belief.” See In re Lee, 277F.3d 1338, 61 USPQ2d 1430 (Fed. Cir. 2002)

The only “motivation” suggested by the Examiner is that one of skill would have desired a paperboard with a higher caliper (a consequence of less calendering and a higher

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roughness value) because this “would allow for a stiffer and stronger paperboard”. However, this theoretical motivation does not comport with commercial reality. As explained by Applicants on page 13 of the specification, in reality, converting machinery is only designed to accommodate a relatively narrow range of paperboard calipers and unrestrained enlargement of paperboard calipers as suggested by the Examiner would lead to manufacturing difficulties. These practical considerations are in opposition to the subjective and theoretical motivation suggested by the Examiner. Thus, conventional wisdom would have counseled against movement of the properties of a board away from what has, in the past, believed to have been necessary for proper converting.

Also, Applicants’ claimed products are made using a paperboard with a unique combination of properties of density and caliper with a relatively rough surface for unexpectedly good printability and a heretofore unrecognized internal bond for formability on modern forming machines. The combination of good printability and formability in a low density board is a true and unobvious advance in the art. Sandstrom and Sarma come nowhere near suggesting a low density board having these attributes. Furthermore, as the Examiner knows, roughness and printability in low density board products have generally been considered to be inversely proportional. Applicant’s invention is therefore counterintuitive and manifestly non-obvious in this respect as well.

Moreover, the claimed properties of apparent density, caliper, and smoothness are not independent. Each is related to the degree of calendering the paperboard is subject to. More calendering leads to a lower caliper, higher apparent density, and a lower Sheffield smoothness value while less calendering leads to a high caliper, lower apparent density, and a higher Sheffield smoothness value. Thus, assuming arguendo that Sandstrom did disclose a paperboard having all of the claimed properties except the Smoothness value, modification of the paperboard to achieve a higher Sheffield value would very likely place one or more of the other properties outside of the claimed range.

In light of the foregoing, Applicants respectfully urge the Examiner to reconsider the application, to withdraw the objections and rejections, and to issue a notice of allowance at the earliest possible convenience.

In the event this response is not timely filed or if any extension requested is deemed insufficient in any respect, Applicants hereby petition for the appropriate extension of time and

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request that the appropriate fee (or any additional fee) for the necessary extension along with any other fees which may be due with respect to this response be charged to our **Deposit Account No. 12-2355**.

Also, if the Examiner has any questions or believes a discussion would help advance this case to a conclusion, he is encouraged to contact the undersigned by phone.

Respectfully submitted,

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\*\*\*CERTIFICATE OF MAILING\*\*\*

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, Washington, D.C. 20231

on July 16, 2004  
Date



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